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Department of Mines, Mining and Geology
Garland Peyton, Director

THE GEOLOGICAL SURVEY
Special Publication No. 1

EMERGENCY WATER SUPPLIES FOR THE ATLANTA AREA IN A NATIONAL DISASTER

by

J. W. Stewart and S. M. Herrick
United States Geological Survey

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EMERGENCY WATER SUPPLIES FOR THE ATLANTA AREA IN A NATIONAL DISASTER

J. W. Stewart and S. M. Herrick

The Need for Emergency Water Supplies

The Cuban crisis was another reminder of the value of emergency water supplies during a national disaster, not only in Georgia, but throughout the entire country. This article is presented as an aid to the thinking about an emergency water supply for the Atlanta area in the event that the municipal water plant should be destroyed or rendered unusable in the event of a nuclear explosion. Suggestions also are given for obtaining small supplies by individuals because it is highly probable that we will need to rely on our own resourcefulness to survive.

The human body can exist for considerable periods of time on a limited food supply but unfortunately man cannot live very long without water. Moreover, food supplies sufficient for a considerable period may be stored in a limited space, but it would be a near impossibility to store enough water to supply an average family for a month or so. Canned or bottled water is a stop-gap measure lasting at most for a few days or weeks, and although essential for temporary survival, it may not be the answer to surviving the aftermath of atomic war. What happens when the canned and bottled water is exhausted? We can expect the water supply to give out long before emergency food rations are depleted. Suppose the emergency lasts for months and it is not safe to stay outside the shelter for long periods of time? Where do we turn for additional water? If the Atlanta Waterworks is destroyed or electric power fails, either of which may happen, what then? If the storage tanks are destroyed and the distribution system disrupted there would be no way to deliver water where it is needed even if the waterworks were intact. Moreover, the possibility should be considered that a blast may temporarily block off the flow of the Chattahoochee River and change the course of the river along some stretches and it may take some time to divert the water to the plant.

Emergency water supplies may be needed not only to keep us alive but also for fire fighting and washing down contaminated areas until such time that the water plant is placed back in operation. Therefore, we are confronted by a question of paramount importance—can we afford to rely solely upon river water treated and pumped at the waterworks as our one and only supply? Obviously the answer is No!

If most of the population survives a nuclear explosion and the water plant is inoperative, how soon can we use Chattahoochee River water and how do we go about making the water drinkable? We may assume that the river will become contaminated by radioactive particles because it is directly exposed to fallout. Probably most of the fallout will be carried downstream by the river but the rate at which the contaminants leave the area depends largely upon the stage and velocity of the river. That is, the finer particles in suspension will be carried further downstream before settling, but as the velocity of the stream decreases the coarser sediment load is deposited, and any radioactive material absorbed by the sediments may in time build up to undesirable concentrations. The material may remain in the river bed until such time that the river rises and the stream bottom is scoured. Another factor to be considered is the time element wherein the radioactive materials decay and eventually many cease to be an immediate hazard. However, some radioactive elements such as strontium 90, cesium 137, and carbon 14 are long-lived and would continue to be a potential danger for many months and years.

On the other hand, if the water plant remains operative after a blast, settling tanks and filters will remove suspended solids from the water. Therefore, if a large part of the contamination were absorbed by these solids, it too would be removed. Some authorities are of the opinion that any pre-attack estimates of the radiological contamination of drinking water will be uncertain. Certainly there will be significant differences between the fallout problems resulting from tests carried on today and those which result from wartime nuclear explosions.

SOURCES OF EMERGENCY WATER SUPPLIES

Wells

What is the outlook for an emergency supply of safe water for the Atlanta area? Where will we find the water? The answer—in the ground, or as it is commonly known, ground water. This is water that has seeped into the ground from rains and is stored in the rocks. Rainfall coming from an atmosphere that has been contaminated by nuclear-bomb fallout may be unsafe for human consumption for a period of time. Fortunately, however, during its journey downward into the ground the contaminated water tends to become purified as a result of the filtering action through many feet of sand, silt, and clay. The water may be found within a few feet of the surface to as much as several hundred feet below land surface. Water that occurs within a foot or two of the surface is likely to become contaminated with radioactive particles or it may have been polluted before the blast. We need to go deep into the ground and find water which is not polluted and which will be safe to drink without treatment. The deep water is the best source of emergency supplies because the chances of it becoming contaminated are very remote, unless a large fracture feeding the well is directly connected with land surface.

An over abundance of water may not be obtained from some wells in the area because many of the rocks are hard and dense and therefore do not lend themselves to storing of large quantities of water. As a general rule, most wells will yield some water, and the yield of the more productive wells far outweighs that of the poor producing ones. By planning now while there is still time, and by making a geologic and hydrologic study of the surrounding area, well sites could be selected and wells drilled in strategic locations throughout Atlanta and the outlying vicinity. Moreover, a large number of privately-owned wells and abandoned or unused municipal wells in the area could be included in the proposed network of supply wells.

In Atlanta wells several hundred feet deep in buildings designated as public shelter areas might quickly repay their cost in an emergency. Also, additional wells drilled at regular intervals—one per 5 or 10 city blocks—enclosed in protective concrete shelters and operable without electric power might also be considered.

Springs

Many springs throughout the Atlanta area could be utilized as a supplemental water supply if adequately protected from fallout and pollution. The water from springs is ground water which has found one or more openings in the rocks and discharges to the surface when the ground-water reservoir is filled. However, before a spring is developed we must first determine the bacteriological quality of the water. We must find out if the water is polluted and dangerous to use. If the water is polluted can it be made safe to drink?

It should be stressed that water from a spring is not necessarily safe to drink simply because it is clear, cool, and sparkling. Contaminating material may penetrate through cracks and fissures and pollute the water. Such pollution is more apt to occur where houses, barns, sewers, septic tanks are located on higher ground near a spring. Therefore, it is good safety practice to have the spring water tested by a bacteriologist before it is used for human consumption.

If plans are to include the use of spring water during an emergency we must first select springs which flow all year and then determine whether the water is safe to use. The use of springs which flow only during rainy seasons (often called wet-weather springs) should be avoided because their flow is unpredictable and the water is apt to become polluted. For those springs selected, provisions then should be made to develop and protect the water from contamination by people, animals, and radioactive fallout. The time to do this is now and not later when every drop of safe water available will be needed to survive.

The chemical quality of the ground water throughout the area, both from springs and wells, generally is good. No minerals are present in the ground water in sufficient quantities, with the exception of a few wells and springs which contain highly mineralized water, that would be harmful to man over an extended period of time.

Very little water other than that from springs or that which could be bailed or pumped by hand from shallow wells would be available if the wells were not equipped with an auxiliary power supply. If electric power were disrupted, very few, if any, drilled wells would be usable because there would be no way to pump the water. Therefore, if an emergency water supply from wells is considered plans should include the installation of auxiliary power at selected wells throughout the area. Moreover, it might be desirable to install the pumps, motors, water tanks, and pipes below ground level for added protection against an explosion.

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AVAILABLE WATER SUPPLIES

Surprising as it may seem to many Atlantans, a large number of wells are found in and around the city. These include domestic, industrial, air-conditioning, subdivisions, school, municipal, and abandoned municipal wells. Generally speaking, the number of wells in the area has decreased during the past 10 to 15 years as city water has been made available in outlying areas. Many towns and subdivisions that formerly obtained water from wells are now tied into surface-water systems and no longer use ground water. Many of these unused wells still are available and with little expense could be made usable, but a large number have since been destroyed. The same thing is true of many industrial, domestic, and other wells in the area.

By far the largest number of wells in the area are domestic wells, that is, wells drilled for household supplies. Industrial wells constitute the next largest group, followed by municipal and subdivision wells. Industrial wells generally are the largest single producers because most industries require fairly large volumes of water and the wells usually are of larger diameter and deeper than domestic and other wells. However, because of the large number of domestic wells in the surrounding area the combined yield from these wells probably is greater than that of any other group of wells.

Within a 25-mile radius of Atlanta, which includes such outlying towns as Alpharetta, Lawrenceville, Conyers, Jonesboro, Palmetto, Douglasville, and Kennesaw a large number of dug and drilled wells and springs are available. In the rural areas the prevailing source of ground water for domestic use is the dug well. The total number of dug wells in use is not known but it is roughly proportional to the rural population. The number of available drilled wells, for all purposes, is estimated to be about 800 to 1,000, nearly half of which are in Fulton County.

In case of power failure all wells equipped with electric motors would become useless unless an auxiliary source of power was available. Probably the simplest method of obtaining water from wells in such an emergency would be to remove the pumps and install ordinary suction-rod hand pumps.

Figure 1 shows the location of known wells and springs within a 25-mile radius of Atlanta. Tables 1 and 2 describe the locations of wells and springs showns in figures 1 and 2. Very little is known about the quantity of water available from domestic wells in outlying areas, but because of the large number of such wells scattered throughout the area they are a potential source of large volumes of water during an emergency.

Wells listed in tables 1 and 2 were taken from Georgia Geological Survey Bulletin 55. As no comprehensive field check was made on the current status of these wells some may be either in disuse or completely abandoned.

Although the quantity of water now available from wells and springs would not compare with that being supplied by the Atlanta water plant an ample supply of water could be obtained to carry us through an emergency period when the water plant is inoperative. After all, the first and foremost objective is survival. Then too, we may not need as much water as is being pumped from the river today because the possibility exists that during a nuclear explosion part of the population may be wiped out and many industrial plants using city water may be destroyed and others may cease to operate during the critical period.

Through necessity we may be forced to install private water supplies to survive. Needless to say, our chances of survival are increased if we plan ahead for such emergencies. Several competent well drillers are available in the area and anyone desiring information about the cost of drilling wells should contact the drilling companies. Such preparations probably are worth considering because city water may not be available and when emergency water rations are depleted we will be on our own.

As mentioned previously, water occurs in the ground at different depths depending upon the topography of the land. Generally speaking, the upper or shallow water is found at depths of 10 to 30 feet below ground surface throughout the area, probably less in some places more in others. Therefore, in some areas wells may be developed in the shallow water whereas in other areas it may be necessary to drill into the underlying rock before an adequate supply of water is obtained.

From the standpoint of accessibility and protection against fallout a good location for a well is in a basement. However, many houses are built on high ridges and hilltops which are unfavorable sites to locate a well because the chances of finding water generally are poor. Therefore, if a well is to be drilled some distance from a sheltered area the high ridges should be avoided in order to improve the chance of finding adequate water, otherwise, the well may be dry. The best sites for wells are in low areas off ridges and hills where water has moved in from high land and collected to form natural underground reservoirs. However, caution should be used to avoid locating wells near areas subject to contamination such as flood channels, alluvial gravels, and surface rock fractures.

For the majority of people who probably will wait until the last minute to prepare for an emergency a well may be dug by hand provided that the water level is close to land surface and occurs in decayed, weathered material and the necessary tools are available to dig and develop a well. If a person wishes to construct a well in the basement of his house certain equipment will be needed. Tools necessary for digging such a well should include a hand auger and 5 or 6 extra 5-foot sections of pipe, pick, shovel, a 20- to 30-foot length of 1¼-inch plastic pipe, and a pitcher, or hand pump. In some areas it might be possible to drive a well point into the ground without augering provided that hard rock is not encountered before striking water. With either of the above methods the chances are improved but not definitely assured that ample water could be obtained to supply one or more families.

We can ill afford to wait until disaster strikes before seeking an emergency water supply. To do so is to invite chaos. It would be ironic to survive an attack only to perish because of a lack of water, especially when Nature has provided us with an abundant and precious supply of safe underground water. The water is available but we must develop the resource before it can do us any good. The possibility of a nuclear attack exists and we are faced with the fact that it may occur at any time. Therefore, emergency water supplies should be included in the overall plan because the stakes are high and for keeps—man's survival!

Additional information regarding available ground-water supplies may be obtained by contacting Captain Garland Peyton, Director, Georgia Department of Mines, Mining, and Geology, 19 Hunter Street S.W., Atlanta 3, Georgia.

Table 1.—*Selected wells and springs within Metropolitan Atlanta*
(see figure 1 for locations)

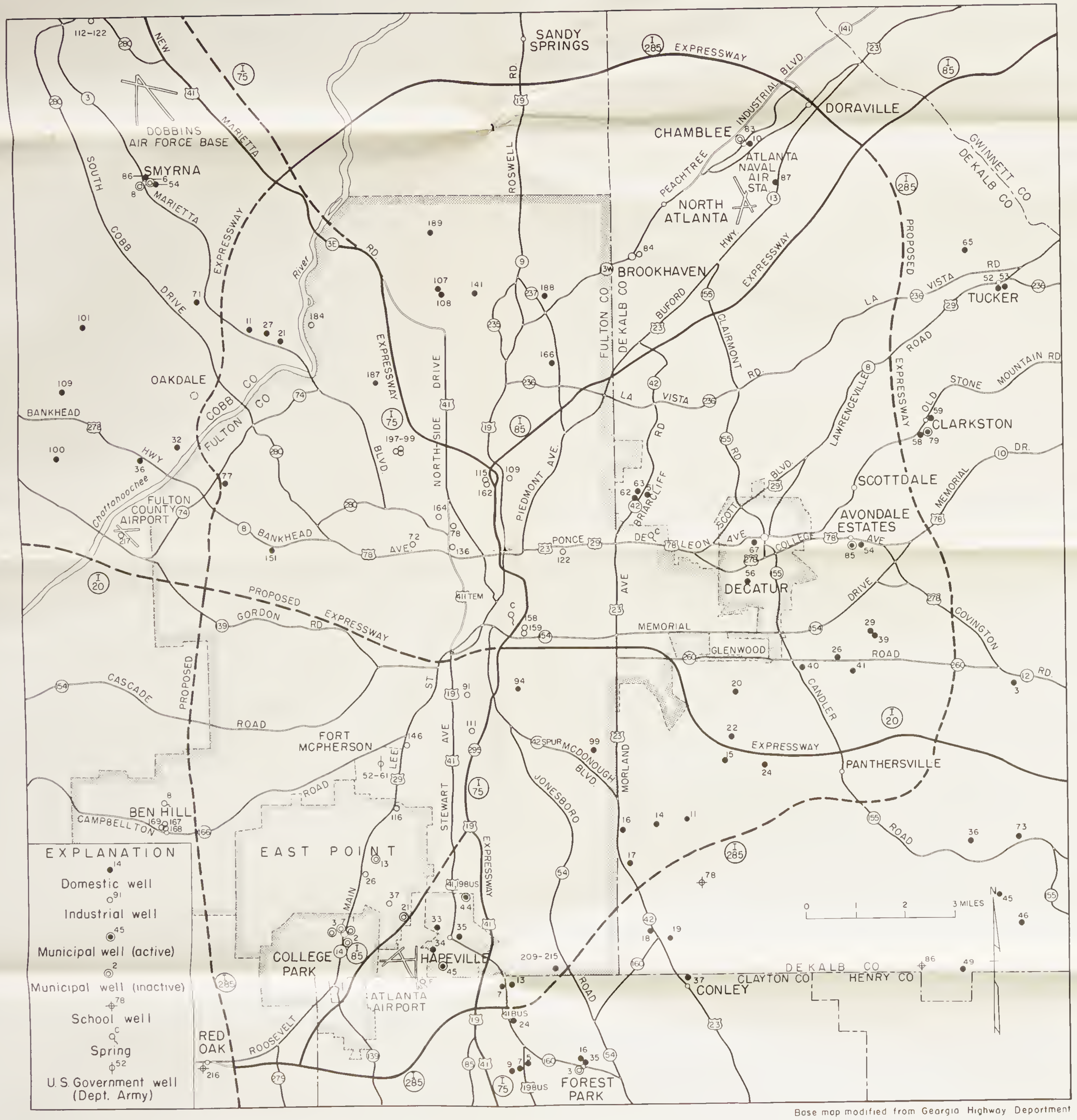
Number	Owner	Location	Yield (gallons per minute)
		CLAYTON COUNTY—WELLS	
3	Town of Forest Park	Few hundred yds. SW. of Central of Ga. R. R. Sta., in Forest Park.	20
5	Wofford Investment Co.	E. side Hwy. 41, just S. of bridge over Central Ga. R. R. in Forest Park.	20
7	H. P. Lieupo (formerly J. R. Hubberly).	W. side Hwy. 41, ½ mi. S. of bridge over Central Ga. R. R., in Forest Park.	10
9	H. D. Thames	½ mi. SW. of Hwy. 41, in Forest Park.	43
13	S. E. Davidson	E. side Hwy. 41, in Hapeville.	
16	J. E. Wells	W. side Hwy. 54, at ice plant, in Forest Park.	25
24	W. H. Bell	E. side Hwy. 41, ½ mi. S. of bridge over Central of Ga. R. R.	40
[illegible]	R. C. Pair	0.1 mi. E. Hwy. 54, ½ mi. N. of Central Ga. R. R. underpass, in Forest Park.	6
37	H. C. Moore	W. side Hwy. 42, 0.1 mi. S. of Clayton-DeKalb Co. line, in Conley.	10
		COBB COUNTY—WELLS	
6	Town of Smyrna	At junction of Highland, Old Roswell, and New Roswell Rds., in Smyrna.	12
8	Do	N. side Church St., few hundred yds. W. of public school in Smyrna.	6
11	Mrs. J. H. Carmichael	0.8 mi. NW. of Ga. P. Co. underpass, E. side Log Cabin Dr., in Oakdale.	
21	J. B. Gaines (formerly) Dr. Lewis Ray)	E. side Hwy 41, 0.45 mi. N. of Hwy. overpass over N. C. & St. L. R.R. in Oakdale.	
27	R. D. Webb	E. side Log Cabin Dr., just S. of Log Cabin Sta., in Oakdale.	
32	H. B. Buckner	E. side Oakdale Rd., 0.5 mi. NE. of Hwy. 78	
36	E. W. Bruton	S. side of Hwy. 78, about 0.5 mi. W. of Hwy. bridge over Chattahoochee River.	
54	R. R. Hawkins	E. side Hwy. 3-E, about 1.7 mi. SE. of Marietta city limits.	30
71	Mrs. Lillian Mavell	S. side of E-W. dirt rd., 0.2 mi. E. of Camp Highland Rd. in Oakdale.	5
86	J. T. Garner	About 200 yds. E of Hwy. 41, just N. of Smyrna city limits.	
100	T. D. Gibbs	0.7 mi. S. of Hwy. 78, 1 mi. SW. of Mt. Harmony Church.	15
101	G. B. Tendonfeld	1.6 mi. NE of Mt Harmony Church	30
109	Atlanta Girl Scouts	0.5 mi. N. Hwy. 78, about 1 mi. NE. of Mt. Harmony Church.	5
112 to 122	Lockheed Aircraft Corp.	Marietta, Ga. (9 wells)	330
		DEKALB COUNTY—WELLS	
3	Robert Copeland	W. side Hwy. 12, 6.2 mi. NW. of Lithonia.	
10	U.S. Government (U.S. Naval Air Station)	On Hwy. 23, near Chamblee, Ga.	7
11	P. M. Harden	E. side Bouldercrest Rd., about 1 mi. N. of intersection Constitution Rd.	3
13	J. W. Clark	N. side Bouldercrest Rd., 0.25 mi. E. of intersection with Cedar Grove Rd.	25
14	W. B. Nathan	2,000 ft. N. of Southern R. R. near City of Atlanta.	10
15	Carey Cook	W. side Gresham Rd. 0.4 mi. S. of Flat Shoals Rd.	35
16	John Gwin	E. side Hwy. 42, 0.65 mi. N. of Hwy bridge over Southern R. R	35
17	Mrs. Carcie E. Anderson (formerly Frank Carter)	E. side Hwy. 42, 0.55 mi. S. of Hwy. bridge over Southern R. R.	
18	J. M. Ketchersid	W. side Hwy. 42, 1.6 mi. W. of Hwy. bridge over Southern R. R.	25
19	L. L. McPherson	S. side of E-W. dirt rd., about 250 ft. E. of Southern R. R. in Conley.	50
20	Mrs. Wesley Griffin	E. side 2nd Ave., about 1 mi. N. of Flat Shoals Rd.	25
22	Clyde Darby	N. side Flat Shoals Rd. at 2nd Ave.	
23	F. M. Holtsinger	N. side Flat Shoals Rd. at junction with 2nd Ave	35
24	Jake Patterson	0.6 mi. E. of 2nd Ave., about 0.1 mi. N. of Flat Shoals Rd.	70
26	Mrs. C. R. McKinney	N. side Glenwood Rd., 0.9 mi. E. of Candler Rd.	
29	Mrs. A. H. Daniel	E. side Columbia Dr., 0.8 mi. NW. of Glenwood Dr.	
33	R. L. Mathis	0.75 mi. E. of Candler Rd., S. side Panthersville Wesley Chapel Rd.	30
34	I. W. Williams	S. side Flat Shoals Rd., 0.35 mi. W. of Candler Rd.	
36	W. A. Sutton	N. side E-W dirt rd., 1 mi. W. of Flakes Mill Rd.	18
39	L. N. Fassett	E. side Columbia Dr., 0.5 mi. NW. of Glenwood Rd.	
40	Lamar Westfall	S. side Glenwood Rd., 0.75 mi. due E. of Candler Rd., few feet W. of public swimming pool.	12
41	J. L. Porter	[illegible] mi. due E. of Candler Rd. N. side McAfee Rd., at dairy.	60
43	L. L. Leach	0.35 mi. due S. of Glenwood Rd., E. side Austin Rd., at dwelling.	8
45	E. Z. Huff	0.8 mi. E. of Flakes Mill Rd., N. side Flat Shoals Rd., at dwelling.	5
46	Mrs. J. P. Coyne	0.3 mi. S. of Flat Shoals Rd., W. side Wesley Chapel Rd., at dwelling in Snapfinger.	24
49	C. H. Foster	0.2 mi. S. of small creek, W. side of right-angled turn in Flakes Mill Rd., between tenant's and owner's houses.	4
51	G. U. Steffner	1041 Oakdale Rd.	15
52	O. N. Ewing	Tucker, Ga.	17
53	W. L. Cousins	do	23
54	D. L. Stokes	32 Berkeley Rd. Avondale Estates, Ga.	62
55	W. B. Elliott	1115 Briarcliff Rd., Atlanta, Ga.	½
56	W. F. McLendon	261 Madison Ave., Decatur, Ga.	7½
58	L. B. Daniel	Clarkston, Ga.	
59	W. J. Atkinson, Jr.	do	38
62	Asa G. Candler	Briarcliff Rd., Decatur, Ga.	30
63	Do	do	225
65	WSB Radio Station	Near Tucker, Ga.	70
67	W. M. Cantrell	[illegible] Covington Rd., Decatur, Ga.	8
73	T. F. Tarver	Wesley Chapel Rd., 1 mi. N. of Snapfinger	4
78	DeKalb County (Bouldercrest School)	Boulder Crest Drive	30
79	Town of Clarkston	Clarkston	60
83	Town of Chamblee	Chamblee, Georgia	
84	Natl. Recording Co.	Brookhaven, Ga.	
85	Avondale Estates	Avondale, Ga.	
86	County Line School	[illegible] Rd.	
87	Lymburner Nursery	Chamblee, Ga	
		DEKALB COUNTY—SPRINGS	
C	City of Atlanta	Intersection of Ponce de Leon and Lullwater Rd.	
		FULTON COUNTY—WELLS	
1	City of College Park	E. side Harvard Ave., in College Park	100
2	Do	S. side Jackson St., in College Park.	100
3	Do	N. side Francis St., in College Park	50
7	Do	At Water Works in College Park.	10
13	City of East Point	S. side Jefferson Ave., at head of small creek, in East Point.	40
21	Do	About 100 yds. E. of well 20 in East Point.	175
26	O'Neil Bros.	S. side Cleveland Ave., between O'Neil Bros. warehouse & Central Georgia R. R.	12
33	Swift & Co.	E. side Central Ave., near small creek, in East Point.	
34	Henry Channin	E. side Central Ave, NE. corner of fertilizer plant, in East Point.	
35	Tennessee Corp.	E. side Central Ave., near NW. corner fertilizer plant, in East Point.	6
37	Piedmont Cotton Mill	W. side Central Ave., N. side of center bldg., in East Point.	100
44	City of Hapeville	E. side Jonesboro Rd., near small creek, in Hapeville.	75
45	Do	W. side Atlanta Ave., in Hapeville	80
51	U.S. Government	W. side of Reservation near small creek at Ft. McPherson.	32
52	Do	About 260 ft. NW. of well 51, at Ft. McPherson.	35
53	Do	About 250 ft. W. of well 52 at Ft. McPherson.	5
54	Do	About 250 ft. S. of Campbellton Rd., at Ft. McPherson.	21.5
55	Do	About 375 ft. S. of Campbellton Rd., at Ft. McPherson.	65
56	Do	About 25 ft. W. of well 55, at Ft. McPherson.	5
57	Do	W. of Roosevelt Hwy., near elevated steel water tank, at Ft. McPherson.	20
58	Do	S. end of Reservation about 800 ft. W. of Roosevelt Hwy., near wooden barracks, at Ft. McPherson.	66
59	Do	S. end of Reservation, about 260 ft. W. of Roosevelt Hwy., Ft. McPherson.	20
60	Do	S. end of Reservation, about 30 ft. W. of Roosevelt Hwy., near well 59, at Ft. McPherson.	136
61	Do	SE. corner of Reservation, about 475 ft. W. of Roosevelt Hwy., at Ft. McPherson.	
72	Sydel-Woolley Co.	748 Rice St., NW., Atlanta, Ga.	110
77	Cora C. Helms	E. side Bolton Rd., ¼ mi. N. of Hwy. 78, in Bolton.	16
78	White Provision Co.	Howell Mill Rd. and 14th St., in Atlanta.	35
91	Liquid Carbonic Co.	743 McDaniel St., SW., in Atlanta.	
94	J. A. Davis	Custer Ave., SW., in Atlanta.	3
99	Mrs. E. B. Buffington	978 Bruce Circle, in Atlanta.	5
107	Paul Sydell	W. Paces Ferry Rd., in Atlanta.	5
108	Mrs. McClain	W. of Paces Ferry Rd., in Atlanta	12
109	Pershing Hotel	1428 Peachtree St., NE., in Atlanta.	8
111	Natl. Fruit & Produce Co.	725 Humphries St., SW., in Atlanta.	52
115	Atlantic Steel Co.	1365 Mecaslin St., NW., in Atlanta.	130
116	Central of Ga. R. R.	Lee St. near Lakewood Ave., in Atlanta.	103
122	Sears Roebuck & Co.	675 Ponce de Leon Ave., in Atlanta.	30
136	King Plow Co.	887 W. Marietta St., NW., in Atlanta.	57
141	Lawrence Willet	3661 Tuxedo Rd., NW., in Atlanta.	22
146	Natl. Biscuit Co.	1400 Murphy St., in Atlanta.	11
151	Frank Mayo	40 Wood St., NW., in Atlanta	30
158	Fulton Bag & Cotton Mill	170 Boulevard, in Atlanta.	25
159	Do	do	
162	Atlantic Steel Co.	1365 Mecaslin St., NW., in Atlanta.	70
164	Armour & Co.	14 Brady Ave., in Atlanta.	75
166	J. T. Flack	2700 Pinetree Rd., N.E., in Atlanta.	32
167	Southern Natl. Gas Co.	Ben Hill.	144
168	Do	do	3
169	Do	do	5
184	Rhodes Perdue	About 1 mi S. of Hwy. 3-E, 0.2 mi. E. of Chattahoochee River.	5
187	Mrs. J. A. Smith	1401 Moores Mill Rd., in Atlanta.	
188	C. V. Logan	3381 Piedmont Rd., in Atlanta.	31
189	Lowell Dowdell	670 Mt. Paran Rd., NW., in Atlanta.	35
197 to 199	Southern Aluminum Finishing Co.	1581 Huber St., NW., in Atlanta.	
209 to 215	Blair Village	Poole Creek Rd., Hapeville, Ga.	
216	Fulton County	Red Oak, Ga.	
217	Fulton County	Fulton County Airport.	
		FULTON COUNTY—SPRINGS	
B	Mt. Gilead Church Assoc.	Camp Grounds, ¼ mi. north of Ben Hill.	2½
C	Atlantic Ice & Coal Co.	247 Courtland St., in Atlanta.	35
F	Fulton County	Atlanta Airport.	

Table 2.—*Selected wells and springs within a 25-mile radius of Atlanta*
(See figure 2 for locations)

Number	Owner	Location	Yield (gallons per minute)
		CLAYTON COUNTY—WELLS	
1	Town of Jonesboro	Opposite SE. corner of Court House, in Jonesboro.	21
2	Do	W. side of town, near small creek, in Jonesboro.	52
10	Hastings Seed Co.	On Hwy. 41, 1 mi. N. of Lovejoy	15
17	Aristocrat Dairy	W. side Hwy. 54, 0.9 mi. S. of Central Ga. R.R. Sta., in Morrow.	25
18	Do	do	3
19	Do	do	16
20	Do	do	10
25	J. W. Chapman	E. side Hwy. 41, 1 mi. S. of bridge over Central Ga. R. R.	3
26	A. C. Crane	E. side Hwy. 41, 3 mi. S. of Clayton-Fulton Co. line.	
27	G. T. Humphrey (formerly J. L. Paul)	E. side Hwy. 41, 4 mi. S. of Clayton-Fulton Co. line.	10
28	Roscoe Carden	N. side of E-W dirt road, 0.3 mi. W. of Hwy. 41.	50
29	W. Langhauser	N. side Riverdale Rd., at junction of Riverdale Rd. & Hwy. 41.	4
30	N. H. Bebefield	N. side Riverdale Rd. 1.8 mi. NW. of junction of Riverdale Rd. & Hwy. 41.	
31	Clayton Co. (Riverdale School)	N. side Riverdale Rd., 0.2 mi. E. of Southern R R in Riverdale.	22
32	Mrs. H. L. Cobb	E. side Hwy. 41, 0.4 mi. S. of junction Hwy. 41 & Riverdale Rd.	15
33	W. A. Springsteen	E. side Hwy. 41, 0.9 mi. S. of junction of Hwy. 41 & Riverdale Rd.	30
39	Hastings Seed Co.	On Hwy. 41, 1 mi. N. of Lovejoy.	5
40	Clayton Co. (Lovejoy School)	do	10
41	Estes Mfg. Co.	Opposite SW. corner of furniture factory, at Rex, Ga.	2
42	Do	N. of furniture factory, opposite NW. corner private dwelling at Rex, Ga.	2
43	Do	N. side Hwy. 0.2 mi. W. of Hwy bridge at Rex, Ga.	1
45 to 48	City of Jonesboro	Jonesboro, Ga.	

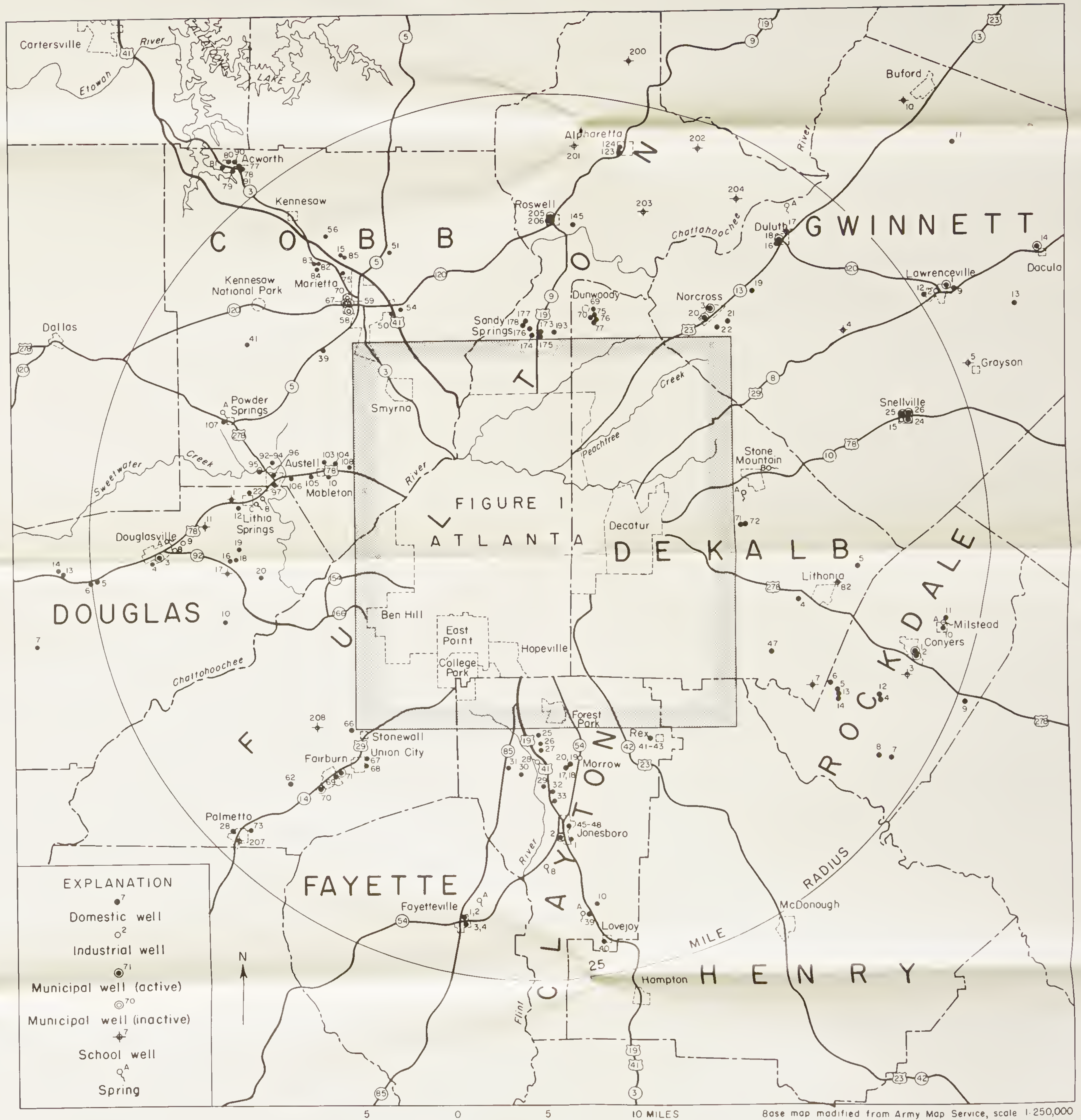
Table 2.—*Selected wells and springs within a 25-mile radius of Atlanta*—*Continued*
(See figure 2 for locations)

Number	Owner	Location	Yield (gallons per minute)
		CLAYTON COUNTY—SPRINGS	
A	Hastings Seed Co.	2 mi. northwest of Lovejoy on west side of Hwy. 41.	25
B	Mundys Mill Spring	Near Swamp Creek 2 mi. southwest of Jonesboro.	4½
		COBB COUNTY—WELLS	
10	The Candlelight Restaurant	S. side Hwy. 78, 0.4 mi. E. of R. R. Sta. in Mableton.	4
15	Cobb County (Elizabeth School)	E. side Hwy. 41, approx 1½ mi. NW. Marietta city limits.	22
39	Cobb County (prison)	3 mi. SW. of Marietta.	12
41	J. N. McEachern	About [illegible] mi. NE. of Powder Springs.	24
50	Cobb County (airport)	0.5 mi. W. of Hwy. 3 E, about 2 mi. SE. of Marietta city limits.	75
51	T. O. Jarvis	S. side Hwy. 5, 1½ mi. E. of Hwy. 3-E, NE. of Marietta.	21
54	R. R. Hawkins	E. side Hwy 3-E, about 1.7 mi SE. of Marietta city limits	[illegible]
56	Elwyn Tomlinson	N. side of E-W dirt Rd., 1.3 mi. E. Hwy. 41, about 2 mi. SE. of Kennesaw city limit.	31
58	City of Marietta	W. side of Wright St. extended, in Marietta	34
59	Do	Midway between Lemon St. and Hwy. 120, about 0.2 mi. W. of Marietta city limits.	30
67	Do	W. side of Highland Ave. and N. of Whitlock Ave., in Marietta.	35
70	Do	S. side Sessions St., just E. of Rose Lane in Marietta.	40
75	Spicer Lumber Co.	S. side Hwy 41, near Hwy. bridge over N C & St. L. R. R., about 1 mi. N. of Marietta city limits.	100
77	Town of Acworth	About ¼ mi. E., of N C. & St. L. R. R. top "Mitchell Hill", in Acworth.	30
78	Do	About [illegible] mi. E. of N. C. & St. L. R. R., near top "Mitchell Hill", in Acworth.	45
79	Do	Few yards W. of Acworth Public School, in Acworth.	22
80	Do	E. side of Cherokee St., in Acworth.	26
81	Do	E. side Seminole Dr., in Acworth.	60
82	U. S. Gov't.	Few feet N. of well 83, at Kennesaw National Park.	3
83	Do	About 0.55 mi. W. of Hwy. 41, 250-300 feet N of E-W. dirt rd. at Kennesaw National Park.	25
84	Do	At Kennesaw National Park.	10
85	D. C. Hames	E. side Hwy. 41, 0.4 mi. NW. of Hwy. bridge over N. C. & St. L. R. R.	
90	Town of Acworth	Few hundred yds. W of Hwy. 41, S. side City Hall, in Acworth.	
91	Acworth Mills	½ mi. E. of Acworth city limits, between mill & N. C. & St. L. R. R. tracks.	38
92	Benscot Mineral Waters	¾ mi. NW. of Austell near Sweetwater Creek.	3
93	Do	⅝ mi. NW. of Austell, near Sweetwater Creek.	1
94	Do	[illegible] mi. NW. of Austell left bank of Sweetwater Creek.	[illegible]
95	Do	¾ mi. NW of Austell near Sweetwater Creek.	17
96	Southern Railway	N side Southern R. R. in Austell	10
97	Brunk	½ mi S. of Austell	
103	H. A. Allen	0.1 mi. N. of R. R. Sta., opposite public school, in Mableton	7
104	F. B. Henson	N. side Hwy 78, 0.5 mi E. of R. R. Sta., in Mableton.	10
105	J. B. Gordon	S. side Hwy. 78, 1.2 mi W. of R. R. Sta., in Mableton	1
106	P. S. Hendrick	0.2 mi. S. of Hwy. 78 0.9 mi. E. of Hwy intersection in Austell	1
107	Town of Powder Springs	0.4 mi. E. of Southern R. R. in Powder Springs, few feet W. of elevated steel water tank, S. side Hwy. 6, in Powder Springs.	200
108	P. [illegible] Harding	N. side Hwy 78, 1.4 mi. W. of Mt. Harmony Church.	2
		COBB COUNTY—SPRINGS	
A		East side of Powder Creek, in Powder Springs.	1
		DEKALB COUNTY—WELLS	
4	Mrs. J. R. Allen	N. side Hwy 12 1.1 mi. NW. of Lithonia	
5	Consolidated Quarries Corp.	Opposite E. side of office building about [illegible] mi. NE. of Lithonia.	[illegible]
7	DeKalb County (Candler School)	W. side paved, secondary rd., opposite NE. corner School bldg., few feet E. of elevated steel tank, Klondike School.	10
17	J. I. Sockwell	SW. of Lithonia, W. side Pole Bridge Cr., near S. end of mill.	22
69	G. T. Bailey	Dunwoody.	22
70	Mrs. V. G. Atkinson	Dunwoody Rd., Atlanta.	2
71	W. B. Elliott	Redan Rd.	1
72	Do	do	½
75	W. A. Womack	Dunwoody.	75
76	Wayman Spruer	About 0.7 mi. S. of Dunwoody	20
77	Ewel Spruer	About 0.8 mi. S. of Dunwoody.	[illegible]
82	DeKalb County	Rock Chapel Rd., Lithonia.	
		DEKALB COUNTY—SPRINGS	
A	Town of Stone Mountain	End of Poplar St., W. side of town of Stone Mountain.	18
B	State of Georgia	Junction of Hwy 78 and 236.	
		DOUGLAS COUNTY—WELLS	
1	Douglas County (Lithia Spring School)	N. side Hwy. 78, at school house in Lithia Springs.	20
3	Town of Douglasville	S. side Hwy. 78, in Douglasville.	20
4	Trout Estate	S. side Hwy. 78, ½ mi. N. of Douglasville.	5
5	H. Strawn	S. side Hwy 78, 2 mi. W. of Douglasville	[illegible]
6	Pearl Strawn	do	1
7	John W. Lee	7 mi. SW. of Douglasville.	2
8	Douglas Mills	S. side Hwy. 78, E. side of Douglasville	8
9	Do	do	[illegible]
10	W. B. McCullough	4 mi. SE. of Douglasville	[illegible]
11	Douglas County (Beulah School)	S. side Hwy. 78, 2½ mi. E. of Douglasville.	[illegible]
12	Stanley Agan	¼ mi. SW. of Lithia Springs	5
13	T. Burnett	N. side Hwy. 78, 4 mi. W. of Douglasville	2
14		do	2
16		N. side Hwy. 92, 2½ mi. SE. of Douglasville	20
17	Douglas County (Mt. Carmel School)	S. side Hwy. 92, 2 mi. W. of Douglasville	5
18	R. D. Lee	3 mi. SE. of Douglasville.	1½
19	County Line Church	3 mi. E. of Douglasville	5
20	H. H. Richardson	4 mi. E. of Douglasville	5
22	H. C. Martin	½ mi. W. of Lithia Springs at Sweetwater Park Hotel.	
		DOUGLAS COUNTY—SPRINGS	
A		¼ mi north of Hwy. 78, near Douglas Mills	15
B		Lithia Springs Golf Course, ¼ mi. east of Lithia Springs.	2
C		300 feet S. of B.	
		FAYETTE COUNTY—WELLS	
1 to 4	City of Fayetteville	Fayetteville, Ga.	
		FAYETTE COUNTY—SPRINGS	
A	Dixon Spring	1.6 mi. northeast of Courthouse, Fayetteville, Ga.	
		FULTON COUNTY—WELLS	
28	J. O. H. Sanders	2888 Habersham Rd., Atlanta.	10.9
62	E. C. Creel	2.4 mi. SW. of main intersection in Fairburn, 0.3 mi. W. of Hwy. 29.	
66	Fulton County (Prison Camp)	About 0.5 mi. N. of Hwy. 29, at Prison Camp, in Stonewall.	30
67	Union City	About 0.8 mi. E. of Hwy. 29, in Union City	18
68	Do	Few hundred yds. S. of well 67, in Union City.	70
69	City of Fairburn	About 0.2 mi. E. of Hwy. 29, in Fairburn.	
70	Do	E. side Hwy. 29, about 0.4 mi. S. of town of Fairburn.	
71	Do	About 0.3 mi. N. of well 69, in Fairburn.	15
73	Palmetto Cotton Mill	Palmetto.	9
123	Town of Alpharetta	Alpharetta.	40
124	Do	do	75
145	John Blick	1½ mi. N. of Roswell, N. of Chattahoochee River	6
173	Burdette	Sandy Springs.	30
174	J. J. Cochran	do	50
175	R. N. Hardeman	do	5
176	M. K. Cowart	94 Johnson Ferry Rd	5
177	W. A. Adams	do	15
178	J. B. Childs	6400 Long Island Dr.	18
193	T. K. Glenn	1 mi. E. of Sandy Springs.	7
200	Hopewell School	Hopewell Rd., S. of Thompson Rd	
201	Northwestern School	Roswell Birmingham Rd.	
202	Amy L. Dodd School	Kimball Bridge Rd.	
203	Newton School	Alabama Rd.	
204	Warsaw School	State Bridge Rd.	
205	Town of Roswell	Roswell, Ga.	
206	Do	do	
207	Rico School	Palmetto, Ga.	
208	Cedar Grove School	Fairburn-Cedar Grove Rd.	
		GWINNETT COUNTY—WELLS	
1	City of Lawrenceville	About 0.2 mi. N. of Hwy. 29, E. side of town, in Lawrenceville.	270
2	Lawrenceville Ice & Coal Co.	100 ft S. of Seaboard R. R. at ice plant, in Lawrenceville.	20
3	City of Norcross	About 50 ft. W of filter plant, in Norcross.	100
4	Gwinnett County (Bethseda School)	N. side Hwy. 29, about 4 mi. W. of Lawrenceville.	50
5	Gwinnett County (Grayson School)	About 4 mi. S. of Lawrenceville, in Grayson.	50
9	City of Lawrenceville	0.2 mi. N. of Hwy. 29, near well 1, in Lawrenceville.	471
10	Gwinnett County (Sugar Hill School)	W side Hwy. 20, ½ mi. N. of Southern R. R., in Buford.	30
11	Gunter's Dairy	E. side Hwy. 20, 2 mi. S. of Buford.	5
12	City of Lawrenceville	About 100 ft. S. of Seaboard R. R., N. side of town, in Lawrenceville.	400
13	James W. Moore	4½ mi. SE. of Lawrenceville, E. side of dirt road.	15
14	Town of Dacula	About 400 ft. N. of Seaboard R. R., in Dacula.	20
15	Snellville Community Canning Plant	0.1 mi. S. Hwy. 78, in Snellville.	16
16	Calvin Parsons	0.2 mi. N. of Southern R. R., in Duluth.	
17	Gwinnett County (Duluth School)	Few hundred yds. N of Southern R. R., W. side Main St., in Duluth.	18
18	Town of Duluth	Between Hwy. 23 and Southern R. R. in center of town of Duluth.	18
19	H. S. McCurry	E. side Hwy. 23, 1½ mi. SW. of Duluth.	25
20	City of Norcross	Near well 3, in Norcross.	10
21	D. J. Bowen	1¼ mi E. of Norcross.	2.4
22	Frank Knight	S. side Hwy. 23, in Norcross.	55
24 to 26	Town of Snellville	Snellville, Ga.	
		GWINNETT COUNTY—SPRINGS	
A		2 miles north of Duluth.	25
		ROCKDALE COUNTY—WELLS	
1	Town of Conyers	W. side elevated steel water tank, near school, in Conyers.	120
2	Do	0.6 mi. E. of Ga. R. R. Sta., 100 ft. N. of R.R. at pumping plant, in Conyers.	90
3	Rockdale County (Smyrna School)	About 2½ mi. SW. of Conyers.	3
4	Cleeve Morrison	About 2½ mi. E. of Rockdale-DeKalb Co. line, 4 mi. SW. of Conyers.	28
5	Presbyterian Home Mission	1 mi. E. of Rockdale-DeKalb Co. line, 4½ mi. SW. of Conyers.	20
6	W. E. Shepherd	0.2 mi. E. of Rockdale-DeKalb Co. line, 5 mi. SW. of Conyers.	30
7	W. H. Reed	2 mi. NW. of Rockdale-Newton Co. line, [illegible] mi. S. of Conyers.	20
8	M. J. Harbin	3½ mi. NW. of Rockdale-Newton Co. line, 6 mi. SW. of Conyers.	18
9	N. H. Thacker	S. side Hwy. 12, 2 mi. E. of Conyers.	4
10	Callaway Mills	E. side Hwy. 20, at Mill, in Milstead.	20
11	Do	do	60
12	Cleeve Morrison	2½ mi. E. of Rockdale-DeKalb Co. line, 1 mi. SW of Conyers.	7
13	Monastery of the Holy Ghost	1 mi. E. of Rockdale-DeKalb Co. line, 4½ mi. SW. of Conyers.	4
14	Do	do	
		ROCKDALE COUNTY—SPRINGS	
A	P. A. Sims	600 ft. east of Yellow River and ½ mi. north of Hwy. 138.	3



Base map modified from Georgia Highway Department

Figure 1.—Map showing locations of wells and springs in metropolitan Atlanta.



Base map modified from Army Map Service, scale 1:250,000

Figure 2.—Map showing locations of wells and springs within a 25-mile radius of Atlanta.

we must first select springs which flow all year and then determine whether the water is safe to use. The use of springs which flow only during rainy seasons (often called wet-weather springs) should be avoided because their flow is unpredictable and the water is apt to become polluted. For those springs selected, provisions then should be made to develop and protect the water from contamination by people, animals, and radioactive fallout. The time to do this is now and not later when every drop of safe water available will be needed to survive.

The chemical quality of the ground water throughout the area, both from springs and wells, generally is good. No minerals are present in the ground water in sufficient quantities, with the exception of a few wells and springs which contain highly mineralized water, that would be harmful to man over an extended period of time.

Very little water other than that from springs or that which could be bailed or pumped by hand from shallow wells would be available if the wells were not equipped with an auxiliary power supply. If electric power were disrupted, very few, if any, drilled wells would be usable because there would be no way to pump the water. Therefore, if an emergency water supply from wells is considered plans should include the installation of auxiliary power at selected wells throughout the area. Moreover, it might be desirable to install the pumps, motors, water tanks, and pipes below ground level for added protection against an explosion.

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